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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

TORRES VELAZQUEZ, NORCA LIZ

ART UNIT PAPER NUMBER

1771

DATE MAILED: 03/15/2002

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Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/624,660

Applicant(s)

ROCK ET AL.

Examiner

Norca L. Torres-Velazquez

Art Unit

1771

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 25 July 2000.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-32 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-7, 9-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over LUMB et al. (US 5312667) in view of STOCKWELL (US 5359735).

LUMB et al. discloses a composite textile fabric for moving moisture away from the skin. It includes a first fabric layer comprising either a polyester or nylon material which has been rendered hydrophilic and a second fabric layer comprising at least 25% by weight of a moisture absorbent material such as cotton. The first fabric layer and the second fabric layer are formed concurrently by knitting a plaited construction. (Abstract) The reference further teaches that the surface of the material in the first fabric layer is raised. (Column 1, line 40). LUMB et al. also teaches that the composite textile fabric is used in garments, including sweatshirts, sweat pants, underwear, bathrobes, and various types of exercise clothing. (Column 1, lines 50-53)

The composite fabric may be constructed as a warp or weft knit, such as a two-end fleece, three-end fleece, terry with regular plaiting, double terry, double needle raschel and tricot. (Column 2, lines 67-68 through Column 3, lines 1-2)

LUMB et al. further teach that the surface of the first fabric layer is raised by napping. The polyester or nylon layer is either round or modified cross-section, 0.3 to 6.0 denier. (Column 3, lines 30-35).

However, the reference does not disclose the use of particles of a refractory compound embedded within the yarn fibers of the inner fabric layer.

STOCKWELL (US 5359735) discloses surface coatings for fabrics. The reference teaches a coated fabric that is breathable and that will allow water vapor to pass from the non-coated side of the fabric and out through the weave gaps and aligned pore spaces in the coating layer. The reference further teaches that preferably, the fabric is a stretchable fabric such as circular knits. (Column 3, lines 59-65) The stretchable fabric could be used in sport wear garments such as bike, running and workout wear. (Column 4, lines 3-7) The reference teaches the use of coatings in the form of microspheres and metal layers. The microspheres may be glass; *ceramic*, polymer-based plastic, metal or acrylic based flexible microspheres and may be coated with a metal layer. Further, it teaches that the metal layer may be a conductive metal such as silver, copper, nickel or aluminum. (Column 8, lines 41-46)

Since both LUMB et al. and STOCKWELL are from the same field of endeavor, the purpose disclosed by STOCKWELL would have been recognized in the pertinent art of LUMB et al.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the composite textile fabric and provide it with microspheres or a metal layer for the purpose of improving the insulating properties of the fabric without reducing the wearer's mobility as disclosed by STOCKWELL (Column 1, lines 17-23).

3. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over LUMB et al. (US 5312667) in view of STOCKWELL (US 5359735) as applied to claim 1 above, and further in view of LI et al. (US 5480706).

However, the references do not disclose the particular use of titanium carbide, zirconium carbide and hafnium carbide as the refractory compound.

LI et al. disclose ballistic resistant composite articles with improved flame resistant protection. It teaches that for many applications, such as vests or parts of vests, the fibers are used in a woven or knitted fabric. For many of the applications, the fibers are encapsulated or embedded in a matrix material. (Column 1, lines 11-25) The reference teaches the use of ceramic material such as zirconium carbide and titanium carbide. (Column 15, lines 56-60)

Since LI et al. is from the same field of endeavor, the purpose disclosed by Li et al. would have been recognized in the pertinent art of LUMB et al. and STOCKWELL.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the composite textile fabric and provide it with ceramic microspheres such as zirconium carbide and titanium carbide for the purpose of providing the insulating properties disclosed by STOCKWELL above. The LI et al. reference shows that the use of these ceramics embedded in knitted fabrics is well known in the art. (Column 1, lines 23-25).

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Norca L. Torres-Velazquez whose telephone number is 703-306-5714. The examiner can normally be reached on Monday-Thursday 7:30-5:00 pm and alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached on 703-308-2414. The fax phone numbers for the

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organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

nlt

March 4, 2002



TERREL MORRIS  
SUPERVISORY PATENT EXAMINER  
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